NUTRIENT AGAR

INTENDED USE

Nutrient Agar is used for the cultivation of bacteria and for the enumeration of organisms in water, sewage, feces and other materials.

SUMMARY AND EXPLANATION

Early in the 20th century, the American Public Health Association published the formula for a general-purpose medium for the growth of a wide variety of nonfastidious microorganisms.[1] This was in recognition of the need for a standardized medium for the use in the examination of water and wastewater, dairy products and various foods. This relatively simple formulation has stood the test of time, and with the name of Nutrient Agar, is still specified in current compendia of methods for the microbiological examination of a broad spectrum of materials.[2-5] Additionally, it is used in the laboratory for the cultivation and maintenance of nonfastidious species.

PRINCIPLE

Nutrient Agar consists of peptone, beef extract and agar. This relatively simple formulation provides the nutrients necessary for the replication of a large number of microorganisms that are not excessively fastidious. The beef extract contains water soluble substances including carbohydrates, vitamins, organic nitrogen compounds and salts. Peptones are the principle sources of organic nitrogen, particularly amino acids and long-chained peptides. Agar is the solidifying agent.

REAGENTS (FORMULA)

Beef Extract ……..	3.0	g
Peptone …….....	5.0	g
Agar …….	15.0	g
Deionized Water ….…….	1000.0	ml

PROCEDURE

Use standard procedures to obtain isolated colonies from specimens. Incubate plates at 35 ± 2°C for 18-24 hours and 42-48 hours, if necessary.

Tubed slants are used primarily for the cultivation and maintenance of pure cultures. They should be inoculated with an inoculating loop and incubated under the same conditions as the plated medium.

EXPECTED RESULTS

Examine plates for growth.

QUALITY CONTROL

All lot numbers have been tested and have been found to be acceptable. Customers can test products using the following quality control organisms. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

Organisms	Incubation	Results
Enterococcus faecalis ATCC 19433	35 ± 2°C for 18-48 hours	Growth
Escherichia coli ATCC 25922	35 ± 2°C for 18-48 hours	Growth
Pseudomonas aeruginosa ATCC 27853	35 ± 2°C for 18-48 hours	Growth

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BIBLIOGRAPHY

1. American Public Health Association. 1917. Standard methods of water analysis, 3rd ed. American Public Health Association, New York, N.Y.

2. U.S. Food and Drug Administration. 2001. Bacteriological analytical manual, online. AOAC International, Gaithersburg, Md.

3. Eaton, Rice and Baird (ed.). 2005. Standard methods for the examination of water and wastewater, 21st ed., online. American Public Health Association, Washington, D.C.

4. Horwitz (ed.). 2007. Official methods of analysis of AOAC International, 18th ed., online. AOAC International, Gaithersburg, Md.

5. Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.

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